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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,380	03/29/2001	Ronald Peter W. Kesselmans	294-98 PCT/U	4884

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EXAMINER
WHITE, EVERETT NMN

ART UNIT	PAPER NUMBER
1623	9

DATE MAILED: 06/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/763,380	KESSELMANS ET AL.	
	Examiner	Art Unit	
	EVERETT WHITE	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 11-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 11-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Abstract

1. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Claim Objections

2. Claim 6 is objected to because of the following informalities: In Claim 6, line 3, the period disclosed after the term "2.5 wt%." should be changed to a comma. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 6 and 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, **Claim 3** recites the broad

recitation "wherein the catalyst is present in an amount ranging from about 5 ppb to about 5000 ppb", and the claim also recites "preferably from 1000 ppb to about 1000 ppb" which is the narrower statement of the range/limitation. Also see similar type of language used in **Claim 6** whereby after recitation of the broad statement "wherein the hydrogen peroxide is used in an amount ranging from 0.01 to 5.0 wt%" is set forth, the narrower statement, which recites "preferably from 0.05 to 2.5 wt %" is disclosed.

The products of **Claims 11-18** having the phrase "comprising an oxidized starch according to claim 1" improperly depend from Claim 1 since Claim 1 is directed to a process and since process limitations cannot impart patentability to a product which is not patentably distinguished over the prior art. It appears that Claims 11-18 should depend from a product Claim, which discloses a novel oxidized starch.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Whistler et al ("Oxidation of Amylopectin with Hydrogen Peroxide at Different Hydrogen Ion Concentrations", The Journal of the American Chemical Society, Vol. 81, pages 3136-3139, 1959, XP002091293).

The Whistler et al reference discloses oxidation of amylopectin with hydrogen peroxide, which anticipates the oxidized starch of instant Claim 8 which comprises at least 95 wt.% of amylopectin.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lotzgesell et al (US Patent No. 3,975,206) in view of Ewing (US Patent No. 3,539,366).

Applicants claim a process of oxidizing starch wherein a rooot or tuber starch comprising at least 95 wt.% based on dry substance of the starch of amylopectin, or a derivative thereof, is treated with hydrogen peroxide in the presence of a catalyst, which catalyst comprises divalent copper ions.

The Lotzgesell et al patent discloses a process for oxidizing starch by employing hydrogen peroxide in combination with heavy metal catalysts that may be selected as copper (see column 3, 2nd paragraph). Lotzgesell et al discloses that the process is effective for any base starch, which include root and root-type starches derived from potato and tapioca (see column 3, 3rd paragraph). The 3rd paragraph of column 3 of the

Lotzgesell et al patent also discloses that the base starch may be chemically modified by the addition of cationic groups and anionic groups as set forth in instant Claim 7. The Lotzgesell et al patent further discloses in Table 1 samples of hydrogen peroxide thinning of starch using salts of irons and copper as catalysts. The table set forth Samples A to G, which discloses the catalysts as being a combination of iron and copper, which embraces the subject matter of instant Claim 4 wherein the copper ions are enhanced by one or more of metals that include iron. The amount of catalysts that is indicated in Tables I and II of the Lotzgesell et al patent suggests the amount of catalysts that is disclosed in instant Claim 3. The 1% amount of hydrogen peroxide that is disclosed in the tables embraces the amount of hydrogen peroxide set forth in instant Claim 6. The instant claims differ from the Lotzgesell et al patent by disclosing the use of divalent copper ions, which is not explicitly disclosed in the Lotzgesell et al patent.

The Ewing patent shows that the use of divalent copper ions in processes for oxidizing starches is well known in the art. The Ewing patent discloses that the catalyst may be selected as copper sulfate, which comprises a divalent copper ion and embraces the copper (II) sulfate set forth in instant Claim 2. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the copper catalyst used in the oxidation of starch in the Lotzgesell et al patent with copper sulfate in view of the recognition in the art, as evidenced by the Ewing patent in the first paragraph of column 3, that copper sulfate is effective in increasing the solubilizing action of hydrogen peroxide on the starch.

10. Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Lotzgesell et al and Ewing patents as applied to Claims 1-8 above, and further in view of Torigoe (Japanese Patent No. JP 07138898) or Morita et al (US Patent No. 4,943,612).

Claims 11-18 are directed to further application of the oxidized starch product indicated in the instantly claimed process of Claim 1.

The oxidized starch product and preparation that are set forth in the Lotzgesell et al and Ewing patents as indicated in the above rejection is brought forth for the current

rejection of the claims. The instant claims differ from the Lotzgesell et al and Ewing patents by further claiming applications of the oxidized starch product which are not detailed in the Lotzgesell et al and Ewing patents. However, the indicated applications recited in instant Claims 11-18 are known in the art as suggested in the Torigoe JP patent and the Morita et al US patent. For example, see the abstract of the Torigoe JP patent, which discloses emulsions for improving sizing efficiency that comprises tetradecenylsuccinic anhydride in a solution of oxidized starch, which embraces the emulsifying agent of instant Claim 18 when the components thereof are an alkyl succinic anhydride and the oxidized starch according to instant Claim 1. See column 13, lines 55-57 of the Morita et al patent whereby the present of oxidized starch in adhesive compositions is indicated which embraces the subject matter of instant Claim 12, which set forth an adhesive comprising the oxidized starch of Claim 1. It is also noted that the mentioned Ewing patent discloses the use of starch in a coating color to act as an adhesive to bind pigment to paper, which embraces the binder disclosed in instant Claim 11. The allowance of the subject matter of Claims 11-18 depends on the allowance of the oxidized starch product. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the oxidized starch used in the emulsifying agent of the Torigoe JP patent or the oxidized starch used in the adhesion composition of the Morita et al patent with the oxidized starch of the Lotzgesell et al and Ewing patents in view of the recognition in the art, as suggested by the Lotzgesell et al and Ewing patents, that oxidized starch minimize the amount of by-products salts caused by other products and increases the temperature stability of the product.

11. All the pending claims are rejected.

Examiner's Telephone Number, Fax Number, and Other Information

12. For 24 hour access to patent application information 7 days per week, or for filing applications, please visit out website at **www.uspto.gov** and click on the button "Patent Electronic Business Center" for more information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is (703) 308-4621. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter, can be reach on (703) 308-4532. The fax phone number for this Group is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

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JAMES O. WILSON
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